

# ECE 345 / ME 380: Introduction to Control Systems

## Collaborative Quiz #2 Grading Sheet

Dr. Oishi

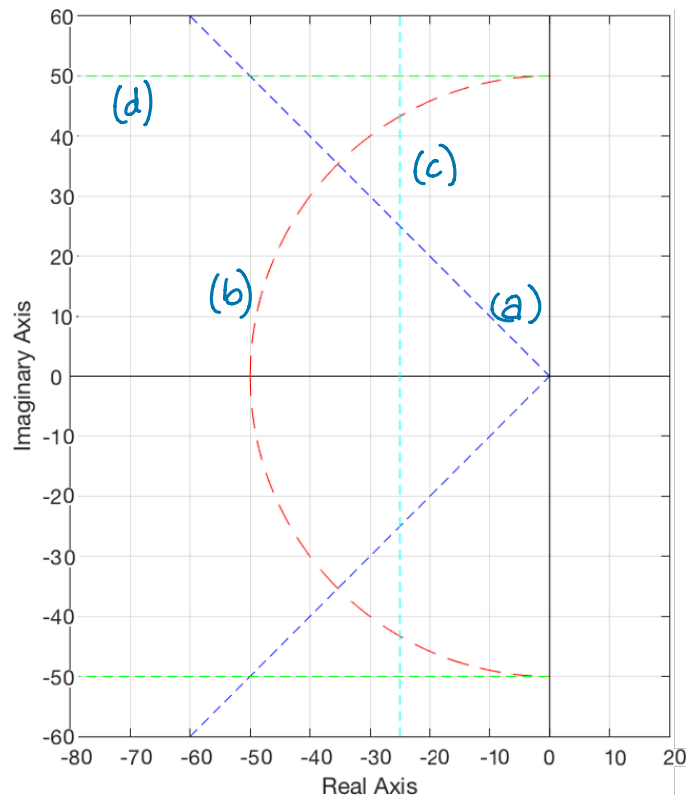
September 24, 2020

This quiz is open-note and open-book. Computational tools (Matlab, calculators) are allowed. No partial credit will be awarded. For each of the questions, clearly write the correct answer.

### In-Class Questions

1. A, B, C
2. B, D
- 3.

- (a) Damping ratio  $\zeta = 1/\sqrt{2}$
- (b) Natural frequency  $\omega_n = 50$
- (c) Settling time  $T_s = 0.16$  seconds
- (d) Peak time  $T_p = \pi/50 \approx 0.06$  seconds



4. A, C
5.  $K = 50\sqrt{2}$  is the most suitable response because  
 $K = 40$  does not meet the settling time  
requirement.

## Statement of Effort

By signing below, I pledge that I have written this quiz as per the indicated instructions, and fully participated in the group.

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**Leader:** Charged with keeping the group on task to complete the allotted work.

**Recorder:** Keeps an organized written record of the group's ideas and copies the group's answers to the grading sheet.

**Monitor:** Tasked with monitoring all group member's learning, and informing the leader when the pace is too slow / too fast and impairing group learning.